

# Performance Report on Surface Streets in the Seattle Central Business District

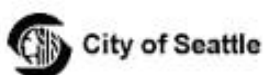
## Volume 6: Fifth Update - Post Tunnel Closure

July 16, 2007



As required by the Agreement between King County, City of Seattle and Sound Transit, as revised June 24, 2002, for the Downtown Seattle Transit Tunnel and Related Facilities.

Prepared by the Monitor and Maintain Committee, with representation from the following agencies:



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## Report Purpose

This report, and subsequent updates, are intended to provide the documentation necessary to satisfy the requirements of Section 10.3 of the “Agreement Regarding the Design, Construction and Operation of the Downtown Seattle Transit Tunnel and Related Facilities”, as executed by the City of Seattle, King County and Sound Transit.

Excerpts from Section 10.3 of this Agreement read as follows:

“It is the Parties’ intent that the Downtown Seattle Traffic and Street Improvements will be sufficient to maintain bus service performance on surface streets in downtown Seattle, during the closure period and after the tunnel is re-opened at performance levels similar to those existing prior to the Closure Period. The Parties hereby establish a Monitor and Maintain Committee (M&M Committee) to be comprised of the designated contacts set forth in Section 20.0. The M&M Committee may be expanded to include participation by other public agencies at the discretion of the Parties. The M&M Committee shall conduct baseline studies of bus travel time and passenger convenience, security, safety and comfort during a measurement period prior to the Closure Period (Baseline Measurement Period.)”

“During the Closure Period and for one year after the Tunnel is reopened, the M&M Committee shall continue to monitor downtown Seattle transportation system performance and make recommendations to the Parties to take actions to maintain said system performance. In performing its functions, the Committee shall be directed to (a) consult with and seek input from suburban stakeholders and (b) report quarterly to the City Council’s Transportation Committee regarding the performance of the downtown transportation system and regarding the Committee’s consultation with various stakeholders.”

The M&M Committee issued its first performance report in September, 2005 just prior to tunnel closure. Volume 1 of the report documented pre-tunnel closure conditions for six specific performance measures. Data for this initial baseline report was collected during the spring and summer of 2005. The six performance measures that have been tracked are as follows:

- Transit travel time
- General purpose traffic operations
- Transit ridership and bus volumes
- Pedestrian activity at bus zones
- Seattle Central Business District (CBD) Customer Surveys
- Transportation Demand Management (TDM) mitigation programs

Each of these six performance studies has been funded as a project within the overall Tunnel Agreement.

Volume 2 of the report issued January, 2006 provided an initial assessment of how the tunnel closure plan performed overall, and summarized the contingency planning effort that took place in the first 90 days following tunnel closure. The data sets used for Volume 2 were collected in the fall of 2005, following tunnel closure and extended up to the beginning of the Thanksgiving holidays. This allowed for a better comparison of before and after tunnel closure conditions in the Seattle central business district for non-holiday times.

Volume 3 of the report issued March 2006 provided updates on a subset of the six performance measures. Specifically, Volume 3 updated information on Measures 1, 3 and 4 and summarized the effect of a set of measures implemented after the release of Volume 2 to address issues identified after tunnel closure. These measures are: transit travel time; transit ridership and bus volumes; and pedestrian activity at bus zones. For Volume 3, transit travel time and bus volumes were derived from the first two weeks in February following the spring 2006 service change. Transit ridership figures were derived from the fall

2005 service change that ended on February 11, 2006. Pedestrian activity at bus stops was derived from a survey taken in late February/early March.

The Volume 4 report issued in August 2006 provided updated information on five of the six performance measures. Data was available for all measures except data related to pedestrian activity at bus zones. Transit travel times for this report were derived from the first seven weeks of the summer 2006 service change. Transit ridership data was taken from the spring 2006 service change. Most of the post-tunnel closure traffic data for this report was collected in May, 2006.

The Volume 5 issued January 2007 updated four of the six performance measures. These include the following: transit travel time, transit ridership and bus volumes, surveys of Seattle central business district customers, and TDM mitigation programs. Transit travel time and bus volumes were derived from the data from October, 2006 up to the Thanksgiving holiday. Transit ridership figures were derived using data from the fall, 2006 service change.

This Volume 6 report updates three of the six performance measures. These include transit travel time; transit ridership and bus volumes; and TDM mitigation programs. Transit travel time and bus volumes were derived using data from February, 2007. Transit ridership figures were derived using data from the winter, 2007 service change.

The projected schedule for the release of the balance of the report updates is shown in Figure 1.

**Figure 1. Performance Report Release Dates**

Performance Measure Updates	Performance Report Release Dates						
	Complete	Complete	Complete	Complete	Complete	Complete	
	Sept 05	Jan 06	March 06	Aug 06	Jan 07	Jul 07	Jan 08
	Volume 1	Volume 2	Volume 3	Volume 4	Volume 5	Volume 6	Volume 7
Transit Travel Time	⊙	⊙	⊙	⊙	⊙	⊙	⊙
General Purpose Traffic Operations	⊙	⊙		⊙			⊙
Transit Ridership and Bus Volumes	⊙	⊙	⊙	⊙	⊙	⊙	⊙
Pedestrian Activity at Bus Zones	⊙	⊙	⊙				⊙
Surveys of CBD customers	⊙			⊙	⊙		⊙
TDM mitigation programs	⊙	⊙		⊙	⊙	⊙	⊙

With the release of Volume 6, there is now only one volume of the report yet to be released. The final report, Volume 7, will be issued in January 2008, to provide enough time to process the last formal customer survey, which will be conducted following the re-opening of the tunnel in September 2007. Following the issuance of Volume 7, the monitoring system established by the M&M process be available through at least September 2008 to support additional reports if circumstances dictate they are needed.

## **Executive Summary on Post Tunnel Closure Conditions through June 2007**

Volume 6 of this Report summarizes the post tunnel closure experience in the Seattle Central Business District through June 2007.

The balance of this report provides more detail on each of the evaluation programs that compose the sixth reporting period post tunnel closure. Key highlights from each of the three monitoring programs included in this report are as follows:

### **Transit Travel Time & Reliability**

The first level of analysis for downtown transit travel time is a composite measurement of average time spent in the study area. This value is obtained by identifying the first and last observation of a bus trip in the CBD, regardless of the corridor. Averaging this figure for all trips results in a single value of time spent in the CBD for all observed trips. This value is used as an index, not a measure. This figure includes layover time as well as through-routed trips under one measurement. It will also include many different paths through the CBD with different lengths and travel conditions. The measure becomes meaningful when compared to the same measurement for different time periods to compare the ease of travel for transit through the CBD.

The data used for this reporting period was collected from February 12 to February 22, 2007. The Travel Time index for this reporting period is **74**, based on an average travel time of 16:21. The baseline Travel Time Index is **100**, representing the value before tunnel closure. The average travel time value at that time was determined to be 21:59, based on bus trips between 4 - 6 pm on weekdays during the month of July, 2005. The current index represents a **26%** decrease in time spent in the downtown core over the pre-tunnel closure baseline, and an **18%** decrease from the previous post-tunnel closure report. Travel time variability is still consistently good and also much improved over the same period in 2005.

At the corridor level, travel time comparisons were made using baseline data collected before tunnel closure and the five sets of post tunnel data available through Volumes 2 through 5 and now Volume 6. The results are summarized below:

- Travel time on First Avenue has improved in both directions by 3 to 4 minutes compared with the previous report. Overall schedule reliability as measured by the standard deviation is slightly improved in both directions in both the AM and PM peaks.
- Travel time on Second Avenue in the AM is effectively unchanged from the previous report. In the PM, average travel time improved by 23 seconds accompanied by reduction in variation as well.
- For Third Avenue, average travel times and variation changed only slightly with reductions in travel times from the previous period of a few seconds. The northbound PM peak was the exception with improvement in both travel time and variation of around 20 seconds. Travel times continue to be 2 minutes better in both directions in both peak periods than before tunnel closure.
- Fourth Avenue S average travel times decreased by about 20 seconds during both the morning and afternoon peak. Schedule variation decreased slightly in both peak periods as well.
- Travel on Virginia, Olive, and Howell are 30 seconds to a minute faster in the PM peak in this report compared to the results reported in Volume 5. Stewart is also faster by about 1 minute in the PM peak, recovering the minute slowdown seen in the previous report. Olive and Stewart continue to operate far better than before tunnel closure. The morning peak on Howell remains slower than before tunnel closure. In summary, bus travel on surface streets are still generally improved over pre-tunnel closure conditions, but riders of the routes that previously operated in the tunnel continue to experience longer trip times.

## **Transit Ridership and Bus Volumes**

Approximately 95,000 north-south riders crossed the downtown screenline at University Street on weekdays in fall 2004 before tunnel closure. As part of a general increase in ridership, this number increased to almost 106,700 weekday riders in spring 2005. Ridership data in spring 2007 indicate that loads have increased almost three percent since spring 2005, to 109,400 weekday riders. Overall ridership to and from the CBD has also increased even more in this period. The fact that the number of riders crossing the screenline has increased more slowly than the number entering and leaving the CBD is probably a result of three factors: (1) some riders leaving downtown who would have crossed the screenline if the tunnel was open are catching their trips after their bus crosses the screenline; (2) some riders entering downtown who would have stayed on their trips past the screenline if the tunnel was open are exiting before they reach University Street; and (3) some riders who would have used the tunnel for cross-CBD trips are not using surface buses as an alternative. In other words, although surface travel times have improved in the CBD since tunnel closure, surface travel times are still slower than tunnel travel times and it is likely that some potential cross-CBD trips are not occurring because they take longer on the surface than they would in the tunnel.

The bus volumes on surface streets in the Seattle Central Business District have not changed significantly from those reported in Volume 5.

## **Transportation Demand Management Program**

The package of Transportation Demand Management (TDM) programs introduced in support of tunnel closure has successfully expanded participation for commute options. The results from tunnel closure through May 2007 can be summarized as follows:

- Over 6,700 individuals and 150 businesses have joined Flexcar since the beginning of tunnel closure mitigation efforts in August 2005.
- 151 individual Puget Pass holders signed up for the Home Free Guarantee (HFG) in the third period, bringing the total close to 700 since program initiation.
- Registration activity at Rideshare Online continues at an accelerated pace, with 368 new registrants this period and about 1,650 total registrations by downtown employees since DSTT closure.
- The number of merchants participating in the second edition of the Shop, Dine & Ride book increased to 144.